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| 10/004.054      | 10/19/2001  | Thomas G. Krajewski  | D-2778/WOD          | 6676             |

7590 01/23/2006  
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| EXAMINER |
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KOVALICK, VINCENT E

| ART UNIT | PAPER NUMBER |
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2677

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/004,054

Applicant(s)

KRAJEWSKI ET AL.

Examiner

Vincent E. Kovalick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 55-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 8-16, 59 and 61-69 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 55-58 and 60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 17-54 and 70-137 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. This Office Action is in response to Applicant's Amendment dated July 30, 2004 in response to USPTO Office Action dated March 1, 2004.

The amendments to claims 6, 8, 15 16, 59, 61, 68 and 69 and Applicant's Remarks have been noted and entered in the record.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 55 and 60 rejected under 35 U.S.C. 103(a) as being unpatentable over Mussler et al. (USP 4,710,758) taken with Richardson et al. (USP 5,459,458).

Relative to claims 1 and 55, Mussler et al. **teaches** an Automatic Touch Screen Calibration apparatus (col. 1, lines 14-68 and col. 2, lines 1-3); Mussler et al. further **teaches** a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, and apparatus for calibrating said touch-screen display system as an integral part of real-time generation of said pixel coordinate estimates without needing said user to assist in the calibration effort by touching predetermined locations on said display screen (col. 2, lines 9-45).

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Mussler et al. **does not teach** a processor responsive to digital signals from said touch-screen display system to generate calibrated pixel coordinate estimates.

Richardson et al. **teaches** a user operated data input device (col. 1, lines 42-67); Richardson et al. further **teaches** a processor responsive to digital signals from said touch-screen display system to generate calibrated pixel coordinate estimates (col. 7, lines 26-41).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Mussler et al. the feature as taught by Richardson et al. in order to provide the means to process the digital signals generated by the touch screen and in turn generate the calibrated pixel coordinate estimates.

Regarding claims 7 and 60, Mussler et al. further **teaches** said apparatus wherein said digital signals comprise a first digital signal and a second digital signal and a third digital signal (col. 2, lines 25-45).

4. Claims 2, 4-5, 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mussler et al. taken with Richardson et al. as applied to claims 1 and 55 respectively in item 3 hereinabove, and further in view of Colgan et al. (USP 6,529,189).

Relative to claims 2 and 56, Mussler et al. taken with Richardson et al. **does not teach** said apparatus wherein said digital signals are derived from voltage levels sampled from bus bars of analog resistive screens within said touch-screen display system.

Colgan et al. **teaches** a resistive analog touch screen (col. 2, lines 46-54); Colgan further **teaches** said apparatus wherein said digital signals are derived from voltage levels sampled from bus bars of analog resistive screens within said touch-screen display system (col. 1, lines 19-28).

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It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Mussler et al. taken with Richardson et al. the feature as taught by Colgan et al. in order to provide the means to capture the digital signals from which the calibrated pixel coordinate estimates are derived.

Regarding claims 4 and 58, Colgan et al. further **teaches** said apparatus wherein said analog resistive screens are powered on and powered off by drives that apply voltage reference levels to said bus bars of said analog resistive screens (col. 1, lines 19-28).

As to claim 5, Colgan et al. further **teaches** said apparatus wherein said drivers are controlled by said processors (col. 1, lines 12-15).

5. Claims 3 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mussler et al. taken with Richardson et al. in view of Colgan et al. as applied to claim 2 in item 4 respectively hereinabove, and further in view of Feldman (USP 6,424,094).

Regarding claims 3 and 57, Mussler et al. taken with Richardson et al. in view of Colgan et al. **does not teach** said apparatus where said voltage levels are converted to said digital signals by a set of analog-to-digital converters within said touch-screen display system.

Feldman **teaches** an electroluminescent display with integrated resistive touch screen (col. 3, lines 40-52); Feldman further **teaches** said apparatus where said voltage levels are converted to said digital signals by a set of analog-to-digital converters within said touch-screen display system (col. 6, lines 26-42 and 56-69 and Fig. 7, and col. 7, lines 1-12 and Fig. 8).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the apparatus as taught by Mussler et al. taken with Richardson et al. in view of Colgan et al. the feature as taught by Feldman in order to put in place the means to convert the

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analog signals generated from the touch-screen to digital signals for processing by the system processor.

***Response to Applicant's Remarks***

6. Applicant's arguments filed July 30, 2004 have been fully considered but they are not persuasive.

Applicant's argument centers on the reasoning that the Mussler et al. (USP 4,710,748) prior art teaches initiating the 'automatic touch screen calibration process' by the user touching the screen at three designated points, wherein the instant invention teaches the said process being initiated by the user touching only one point on the touch screen. In both cases, this initial user action starts the automatic generation of pixel coordinates as taught by Richardson et al. (USP 5,459,458). It is therefor deemed that the initiating process in both teachings is such that the difference between touching the touch screen on three points or one point does not constitute novelty.

***Allowable Subject Matter***

7. Claims 6, 8-16 and 59, 61-69 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Relative to claims 6 and 59, the major difference between the teachings of the prior art of record (Mussler et al. (USP 4,710,758 ; Richardson et al. , USP 5,459,458 and Colgan et al., USP 6,529,189) and that of the instant invention is that said prior art of record **does not teach** a touch-screen display apparatus configured to sample at least eight independent digital signals corresponding to at least eight independent voltage levels on said bus bars of said analog

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resistive screens and corresponding to various combinations of said analog resistive screens being powered on, powered off, touched, and not touched.

Regarding claims 8, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a touch-screen display apparatus wherein said first digital signal corresponds to a voltage level sampled from a bus bar of a second analog resistive screen of said touch-screen display system that is not powered on and is touching a first analog resistive screen of said touch-screen display system that is powered on.

Regarding claims 15 and 68, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a touch-screen display apparatus wherein a processor is responsive to said calibrated pixel coordinate estimates to generate corrected calibrated pixel coordinate estimates due to any mismatch between spatial locations of said bus bars of said analog resistive screens and edges of active areas of said analog resistive screens.

As to claims 16 and 69, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a touch-screen display apparatus wherein a processor is responsive to said calibrated pixel coordinate estimates to generate corrected calibrated pixel coordinate estimates due to any mismatch between spatial locations of edges of active areas of said analog resistive screens and active areas of a display of said touch-screen display system.

Regarding claim 61, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a touch-screen

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display system wherein said first digital signal corresponds to a voltage level sampled from a second reference touching a first axis of said touch-screen display system that is powered on.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 6,016,140 Blouin et al.

U. S. Patent No. 5,283,559 Kalendra et al.

U. S. Patent No. 4,220,815 Gibson et al.

### ***Final Rejection***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



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***To Respond***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 571-272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent E. Kovalick  
January 20, 2006

AMR A. AWAD  
PRIMARY EXAMINER

